Briefs

Syringe Vending Machines for Injection Drug Users: An Experiment in Marseille, France

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ABSTRACT

Objectives. This study evaluated the usefulness of vending machines in providing injection drug users with access to sterile syringes in Marseille, France.

Methods. Self-administered questionnaires were offered to 485 injection drug users obtaining syringes from 32 pharmacies, 4 needle exchange programs, and 3 vending machines.

Results. Of the 343 respondents (response rate = 70.7%), 21.3% used the vending machines as their primary source of syringes. Primary users of vending machines were more likely than primary users of other sources to be younger than 30 years, to report no history of drug maintenance treatment, and to report no sharing of needles or injection paraphernalia.

Conclusions. Vending machines may be an appropriate strategy for providing access to syringes for younger injection drug users, who have typically avoided needle exchange programs and pharmacies. (*Am J Public Health.* 1999;89:1852–1854)

In various countries, including France, public health strategies to promote access to sterile syringes for injection drug users[1] have included legal pharmacy sales without prescription[2–4] and needle exchange programs.[5–6] Another approach that has been described in Europe is the vending machine, which is similar to a coin-operated soda machine; this machine accepts contaminated syringes and mechanically provides sterile syringes in exchange.[7–9] During the fall of 1996, these machines were introduced in Marseille, one of the French cities with the highest proportion of AIDS cases resulting from injection drug use (53.3% of new cases in 1996) and the first one where all 3 types of programs (needle exchange, pharmacy sales, and syringe vending machines) exist simultaneously. We present here the results of a survey carried out by the Regional Center for Disease Control of Southeastern France to evaluate whether vending machines represent a useful adjunct to other approaches for promoting access to sterile syringes, especially among younger injection drug users.

Methods

A total of 39 sites where injection drug users have access to syringes in Marseille were selected for the survey: 32 of the 60 pharmacies that sold more than 30 syringes per month without medical prescription in 1996, the 4 existing needle exchange sites, and the 3 syringe vending machines (out of 7) that delivered more than 250 syringes per month during 1997.

For 3 consecutive days in September 1997, a self-administered questionnaire was offered by the pharmacies' staff to all individuals buying syringes without a medical prescription, by social workers to all participants returning for new syringes in needle exchange programs, and by interviewers, who remained in proximity to the syringe vending machines, to all users of the machines. Respondents were offered the anonymous questionnaire, a pen and clipboard, and assistance if they had difficulty in reading the questions.

The questionnaire included 11 questions on sociodemographic characteristics and 7 questions about knowledge of personal HIV serostatus, about drug use and injection practices, and about access to treatment for drug abuse during the previous 6 months. One question specifically asked, for each of the 3 syringe access programs, whether the respondent "always, often, sometimes, or never" used the program to get access to syringes. Six additional questions asked whether the respondent ever used syringe vending machines and what their reasons were for using or not using them, how many syringes they had just bought or taken, and whether the syringes were for the respondent's own personal use or also for other persons' use. The questionnaire took between 10 and 15 minutes to complete.

Univariate odds ratios and logistic regression procedures were used to compare

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TABLE 1—Characteristics of Injection Drug Users Using Syringe Vending Machines and Other Means of Access to Sterile Syringes (n = 343): Marseille, France, September 1997

	Primary Users of Vending Machines (n = 73), %	Primary Users of Other Programs (n = 270), %	Univariate OR (95% CI)	Multivariate OR[a] (95% CI)
Sex				
Male	79.5	76.3	1.2 (0.7, 2.3)	...
Female	20.5	23.7	...	...
Age, y[b]				
17–30	53.4	37.1	1.9 (1.2, 3.3)	1.3 (1.1, 1.8)
>30	46.6	62.9	...	...
Median (interquartile range)	29 (27–31)	31 (28–34)	...	...
Employment				
Living on welfare	73.2	67.5	1.0	...
Employed	15.5	21.3	0.8 (0.5, 1.3)	...
No resources	11.3	11.2	1.1 (0.6, 1.9)	...
Lived in own house during previous month[b]				
Yes	31.5	50.4	0.5 (0.3, 0.8)	0.7 (0.5, 0.9)
No	68.5	49.6	...	...
Had taken an HIV test				
Yes	90.3	90.0	1.0 (0.4, 2.5)	...
No	9.7	10.0	...	...
Reported a positive HIV test[b]				
Yes	15.1	26.3	0.5 (0.2, 0.9)	0.8 (0.5, 1.1)
No	84.9	72.7	...	...
Duration of injection drug use, y				
≤10	56.3	45.8	1.5 (0.9, 2.6)	...
>10	43.7	54.2	...	...
Frequency of injection in previous 6 mo				
<1 time/d	34.2	36.6	0.9 (0.5, 1.6)	...
≥1 time/d	65.8	63.4	...	...
No. of syringes taken				
1 or 2	87.7	82.7	1.5 (0.7, 3.4)	...
≥3	12.3	17.3	...	...
Type of drug injected in previous 6 mo				
Multiple drugs	38.9	32.7	1.0	...
Heroin only	19.4	28.2	0.7 (0.4, 1.1)	...
Buprenorphine only	23.6	24.2	1.0 (0.6, 1.6)	...
Cocaine only or speedball[c]	18.1	14.9	1.2 (0.7, 2.1)	...
In drug maintenance treatment in previous 6 mo[b]				
Yes	31.5	46.7	0.5 (0.3, 0.9)	0.7 (0.5, 0.9)
No	68.5	53.3	...	...
Type of treatment among those in treatment (n = 149)				
Medical prescription of morphine sulfates	13.0	7.1	1.0	...
Medical prescription of buprenorphine	82.7	73.9	1.4 (0.6, 3.4)	...
Methadone program	4.3	19.0	0.3 (0.1, 1.2)	...
Shared needles in previous 6 mo				
Yes	11.0	11.6	1.0 (0.5, 2.4)	...
No	89.0	88.4	...	...
Shared cooker, cotton, or water for injecting in previous 6 mo[b]				
Yes	12.3	29.8	0.3 (0.2, 0.7)	0.5 (0.4, 0.8)
No	87.7	70.2	...	...

Note. OR = odds ratio; CI = confidence interval.
[a]Logistic regression model. No interaction term was found to be significant.
[b]Variables introduced in the logistic regression model.
[c]Cocaine mixed with heroin, morphine, or amphetamine.

primary users of syringe vending machines (respondents who said they "always" or "often" used vending machines for access to syringes) with the rest of the sample. All variables significantly related to primary use of vending machines in univariate analyses ($P<.05$) were initially introduced into the model; interaction terms were separately tested for each 2-way interaction that arose from the presented main effects model.

Results

During the 3 days of the survey, 485 potential participants were approached, and 343 completed a questionnaire (response rate = 70.7%): 88 of 114 (77.2%) near the vending machines, 114 of 143 (79.7%) at needle exchange sites, and 141 of 228 (61.8%) in pharmacies.

A total of 121 respondents (35.3%) reported that they had never used syringe vending machines; 42.2% of these respon-

dents had never heard about them, 13.2% did not know where they were located, 19.8% feared being identified by the police, 9.9% said they lived too far from the machines, and 14.9% gave other reasons or no reasons.

Among the 222 respondents who reported having used vending machines, a majority (67.1%) had used them only occasionally. The main reasons for using the machines were that access to syringes was free of charge (66.2%) and that the machines were available at any time of the day or night (21.6%); 12.2% of these respondents gave other reasons or no reasons.

The 21.3% of respondents who were primary users of vending machines in the previous 6 months differed significantly from the proportion of the sample who primarily used other programs for access to syringes (Table 1). Even after adjustment by logistic regression, primary users of vending machines were significantly younger and less likely to live in a house they personally owned or rented; they were also less likely to have been in drug maintenance treatment and to have engaged in HIV-related risky injection behaviors during the previous 6 months.

Discussion

The coexistence of different programs in the same city with similar goals that are aimed toward the injection drug–using community unavoidably implies some kind of overlap. But the major finding of this study was that vending machines, after 1 year of experimental use, were able to regularly attract a segment of the injection drug–using population that was hardly reached by the other syringe programs. Primary users of vending machines tended to be younger than the users of other syringe sources and were less likely to have had contacts with the health care system through participation in drug maintenance treatment programs. Injection drug users with these characteristics have been reported to be at higher risk than other users for HIV infection.[10–12]

Although vending machines attracted younger users, the duration of injection drug use was not disproportionately short for these younger persons, which suggests that the machines did not serve to encourage youth to transition into injection drug use. Although previous studies have shown that the period of highest risk for acquiring HIV, hepatitis B, and hepatitis C infection is early after initiating an injection,[13] primary users of vending machines in our sample were predominantly uninfected with HIV, and syringe sharing was uncommon among them. These data suggest that the vending machines were not being abused with entrepreneurial intent, but that the participants were using the machines for individual protection. Further research is needed, however, to alleviate concerns that the introduction of syringe vending machines may facilitate injection drug use among youth.

In conclusion, the experiment conducted in Marseille suggests that syringe vending machines can be a useful adjunct to existing needle exchange programs and pharmacy sales of sterile syringes without prescription. By reaching a different—in particular, a younger—group of injection drug users, syringe vending machines can further the prevention of HIV and other bloodborne infections. Whether the introduction of syringe vending machines would be appropriate in contexts such as the United States, where participation of high-risk young and short-term injection drug users in needle exchange programs is also uncommon,[14] merits consideration. □

Contributors

Y. Obadia and I. Feroni planned the study, analyzed the data, and wrote the brief. V. Perrin contributed to the statistical analysis of data. D. Vlahov and J.-P. Moatti supervised the data analysis and contributed to the writing of this brief.

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